VEGETATION CLASSIFICATION AND SURVEY

International Association for Vegetation Science (IAVS)

Vegetation Classification and Survey 4: 127–130
doi: 10.3897/VCS.105269

NOMENCLATURAL PROPOSAL PHYTOSOCIOLOGICAL NOMENCLATURE

Proposal (32) to conserve the name *Agrostion castellanae* with a conserved type

Massimo Terzi[1], Federico Fernández-González[2], Romeo Di Pietro[3], Jean-Paul Theurillat[4,5]

1 *Institute of Bioscience and Bioresources, CNR, Bari, Italy*
2 *Institute of Environmental Sciences, University of Castilla-La Mancha, Toledo, Spain*
3 *Department of Planning, Design and Architecture Technology, Sapienza University of Rome, Rome, Italy*
4 *Centre Alpien de Phytogéographie, Fondation J.-M. Aubert, Chambésy, Switzerland*
5 *Department of Plant Sciences, Section of Biology, University of Geneva, Champex-Lac, Switzerland*

Corresponding author: Massimo Terzi (massimo.terzi@ibbr.cnr.it)

Academic editor: Wolfgang Willner ♦ **Received** 20 April 2023 ♦ **Accepted** 18 June 2023 ♦ **Published** 7 July 2023

Abstract

The alliance name *Agrostion castellanae* has been widely used for nearly sixty years to indicate a type of acidophilic perennial grasslands occurring in the Iberian Peninsula. At present, the alliance is classified in the order *Agrostietalia castellanae*, and the class *Stipo giganteae-Agrostietea castellanae*. However, the nomenclatural type (lectotype) of the *Agrostion castellanae* is a therophytic grassland, namely the association *Holco setiglumis-Anthoxanthetum aristati*, that was consistently classified for two decades by Iberian authors within the therophytic class *Helianthemetea guttati*. In order to preserve the name *Agrostion castellanae* in its current use, we propose to designate the association *Festuco amplae-Agrostietum castellanae* as the conserved type of the alliance.

(32) *Agrostion castellanae* Rivas Goday 1958 corr. 1964: 353 nom. cons. propos.

Typus: *Festuco amplae-Agrostietum castellanae* Rivas-Martínez et Belmonte 1986: 418 (typus cons. propos.).

(≡) *Agrostion castellano-tenuis* Rivas-Goday 1958: 626 nom. inept.

Taxonomic reference: Euro+Med (2023).

Syntaxonomic reference: Mucina et al. (2016).

Abbreviations: EVC = EuroVegChecklist (Mucina et al. 2016); ICPN = 4th edition of the International Code of Phytosociological Nomenclature (Theurillat et al. 2021).

Keywords

Agrostion castellanae, conserved name, conserved type, Mediterranean grasslands, Iberian Peninsula, nomenclature, phytosociology

Introduction

The alliance *Agrostion castellano-tenuis* was validly published by Rivas Goday (1958: 626–640, sub "*Agrostion castellanae-tenuis*"), with an original diagnosis consisting of three valid associations: "As. nova *Holcus setiglumis* et *Anthoxanthum aristatum*" (p. 627), "As. nova *Agrostis truncatula* et *Periballia laevis*" (p. 636), and "As. *Agrostis truncatula* et *Aster aragonensis*" (p. 637). Rivas-Goday (1958) also ascribed to the alliance a fourth provisional, and therefore invalid (Art. 3b) association (i.e., "As.

PENSOFT

Copyright *Massimo Terzi et al.* This is an open access article distributed under the terms of the Creative Commons Attribution License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Agrostis truncatula et *Trisetum ovatum*"). Both name-giving taxa of the alliance, namely *Agrostis tenuis* Sibth. 1974 [recte: *Agrostis capillaris* L. 1753] and *Agrostis castellana* Boiss. & Reut. 1842, are listed in the valid elements of its original diagnosis. More precisely, the two species are reported as "*Agrostis tenuis castellana*" in table 27 in Rivas Goday (1958: 628) that refers to the "As. *Holcus setiglumis* et *Anthoxanthum aristatum*", and as "*Agrostis castellana* B. et R. (et *tenuis*)" in table 32 that refers to the other three associations. This means that both taxa, "*Agrostis tenuis*" and *Agrostis castellana*, are listed on the same line without being differentiated from each other (see Art. 3g, example 5) since both species are difficult to differentiate morphologically and can hybridize (Romero García 2021).

A few years later, Rivas Goday (1964) corrected the name *Agrostion castellano-tenuis* to *Agrostion castellanae* ["*Agrostidion castellanae* Riv. God. 1957"; recte: *Agrostion castellanae* Rivas Goday 1958 corr. 1964] by mentioning only "*Agrostis castellana* B. et R. (et *A. hispanica* B. et R.)" (*A. hispanica* Boiss. & Reut. 1852 being a heterotypic synonym of *A. castellana*) among the diagnostic species of the alliance, and "*Agrostis castellana* B. et R." in the table of the sole valid association mentioned ("As. *Holcus setosus* et *Anthoxanthum aristatum*"). That table contains the same relevés already published in 1958 with some corrections in the taxon names, like *Agrostis castellana* Boiss. & Reut. as already mentioned, and *Holcus setosus* Trin. 1839 instead of *H. setiglumis* Boiss. et Reut. 1842. Although Rivas Goday (1964) does not explicitly mention the corrected name *Agrostion castellanae-tenuis*, it is clear from the context that the two alliance names represent the same syntaxonomic concept; in fact, the *Agrostion castellanae* also includes one of the associations ("*Holcus setosus* et *Anthoxanthum aristatum*") belonging to the original diagnosis of Rivas Goday (1958). The correction of the alliance name due to the misidentification of its name-giving taxon (Art. 43) is valid because an explicit citation of the name to be corrected is not required before 2002. Prior to that date, the citation of the author is sufficient to identify the name to be corrected when it is accompanied by an unambiguous reference to the original publication, as it is the case in Rivas Goday (1964). Therefore, the correct citation of the alliance name is *Agrostion castellanae* Rivas Goday 1958 corr. 1964.

On the other hand, Rivas-Martínez et al. (2011, p. 290) considered the name *Agrostion castellano-tenuis* invalidly published by Rivas Goday (1958) due to Article 3f, and indicated the name *Agrostion castellanae* Rivas Goday ex Rivas-Martínez, Costa, Castroviejo et Valdés 1980 as the first valid name available for the alliance. These interpretations are erroneous because the misidentification of the alliance name giving taxon (i.e. *Agrostis tenuis*) is a matter of Article 43, not of Article 3f. Since the name *Agrostion castellano-tenuis* was validly published by Rivas Goday (1958), and later corrected by Rivas Goday (1964), the name "*Agrostion castellanae* Rivas Goday (1957) 1964" reported by Rivas-Martínez et al. (1980) together with the unambiguous references to Rivas-Goday's 1958 and 1964 papers, refers precisely to *Agrostion castellanae* Rivas Goday 1958 corr. 1964. Hence, the name "*Agrostion castellanae* Rivas Goday et Rivas-Martínez in Rivas-Martínez et al. 1980" cited by Rivas-Martínez et al. (2011) cannot be considered as the name of a new syntaxon; it is a superfluous name for *Agrostion castellanae* Rivas Goday 1958 corr. 1964 and gets automatically its type (Art. 18c).

Albeit the validity of the name *Agrostion castellano-tenuis* and its correction as *Agrostion castellanae* were subject to controversial interpretations over time (Terzi et al., submitted), the first name fell into disuse and the name *Agrostion castellanae* remained in use for sixty years to indicate an Iberian type of silicicolous perennial grasslands (e.g., Rivas-Martínez et al. 1999, 2001, 2011). Such use of the alliance name is, however, in conflict with its original diagnosis, and in particular with its nomenclatural type. Rivas-Martínez and Belmonte (1986: 418) designated the association "*Anthoxantho aristati-Holcetum setiglumis* Rivas Goday 1958 nom. inv." as the type (lectotype) of the alliance "*Agrostion castellanae* Rivas Goday 1957 corr. Rivas Goday & Rivas-Martínez 1963", considering the latter name as a replacement name for *Agrostion castellano-tenuis* Rivas Goday 1958. However, the name "*Agrostidion castellanae* (Riv. God., 1957), enmd." in Rivas Goday and Rivas-Martínez (1963) is invalid because the authors do not provide an unambiguous reference to the *Agrostion castellano-tenuis* Rivas Goday 1958 nor a sufficient diagnosis (Art. 2b). Nevertheless, the typification is effective for the *Agrostion castellano-tenuis* Rivas Goday 1958, cited unambiguously as nomenclatural synonym by Rivas-Martínez and Belmonte (1986), and consequently for the homotypic *Agrostion castellanae* Rivas Goday 1958 corr. 1964. Therefore, the nomenclatural type of Rivas Goday's alliance is the *Holco setiglumis-Anthoxanthetum aristati* Rivas-Goday 1958.

Rivas-Martínez et al. (2011: 290) incorrectly indicated the "*Asphodelo aestivi-Armerietum gaditanae* Allier & Bresset 1977 corr. Rivas-Martínez, T.E. Díaz, Fernández-González, Izco, Loidi, Lousã & Penas 2002" as the nomenclatural type (holotype) of the "*Agrostion castellanae* Rivas Goday ex Rivas-Martínez, Costa, Castroviejo et Valdés 1980". This alliance name, as mentioned above, is a superfluous name for *Agrostion castellanae* Rivas Goday 1958 corr. 1964. Therefore, the nomenclatural type of Rivas Goday's name is the association *Holco setiglumis-Anthoxanthetum aristati* Rivas-Goday 1958.

The original diagnosis of the *Holco setiglumis-Anthoxanthetum aristati* includes six relevés (Rivas Goday 1958: 627, table 27). Two of them (relevés 3 and 4), which contain *Nardurus patens* (Brot.) Hack. 1880 [recte: *Micropyrum patens* (Brot.) Pilg. 1949], belong to the association *Anthoxantho aristati-Micropyretum patentis* Belmonte et Sánchez-Mata in Sánchez-Mata 1989, described within the *Helianthemion guttati* (Sánchez-Mata 1989) and currently subordinated to this alliance within the class *Helianthemetea guttati* (e.g., Pérez Prieto and

Font 2005; Costa et al. 2012; Ribeiro et al. 2012). The remaining four relevés are dominated by annual taxa, such as *Anthoxanthum aristatum* and *Holcus annuus* subsp. *setiglumis*, whereas *Agrostis castellana* is never recorded with an abundance-dominance value greater than 2 (on the Braun-Blanquet scale). Indeed, the *Holco setiglumis-Anthoxanthetum aristati* (under the inversion "*Anthoxantho aristati-Holcetum setiglumis*") has been ascribed to the alliance *Helianthemion guttati*, representing therophytic grasslands, by most Iberian authors for the past two decades (e.g., Rivas-Martínez et al. 2001; Pérez Prieto and Font 2005; Costa et al. 2012). Therefore, the nomenclatural type of the *Agrostion castellanae* does not fit the current use of the alliance name, which is instead associated with "acidophilous perennial grasslands on sandy-loamy soils" (see EVC). According to the current syntaxonomic interpretation of the *Anthoxantho aristati-Holcetum setiglumis*, a strict application of the rules would lead to consider the *Agrostion castellanae* an alliance belonging to the class *Helianthemetea guttati*.

The 3rd edition of the International Code of Phytosociological Nomenclature (Weber et al. 2000) did not allow the designation of a conserved type to avoid unnecessary changes of commonly used names. As a consequence, when the EVC was published, the names *Agrostion castellano-tenuis* and *Agrostion castellanae* were proposed as *nomina ambigua* and a new alliance name was suggested to replace them ("*Festuco amplae-Agrostion castellanae* Theurillat ined."), although it has remained invalidly published. Consistent with its current usage, the *Festuco amplae-Agrostion castellanae* is classified in the order *Agrostietalia castellanae* and class *Stipo giganteae-Agrostietea castellanae*. With the coming into force of the 4th edition of the ICPN (Theurillat et al. 2021), the new Article 53 gives now the possibility to preserve the widely used name *Agrostion castellanae* in its current use by selecting a conserved type other than the *Holco setiglumis-Anthoxanthetum aristati* Rivas Goday 1958. In this way, the current use of the order name *Agrostietalia castellanae* Rivas Goday ex Rivas-Martínez et al. 1980 (Rivas-Martínez et al. 1980), whose nomenclatural type is the alliance *Agrostion castellanae*, is also preserved.

Moreover, none of the other two associations in the original diagnosis of the *Agrostion castellano-tenuis* (and hence of the *Agrostion castellanae*) is eligible as conserved type. In the "As. *Agrostis truncatula* et *Aster aragonensis*" the abundance-dominance value of "*Agrostis castellana tenuis*" is low, between 1 and 2 (on the Braun-Blanquet's cover-abundance scale). This association [sub "*Astero aragonensis-Agrostietum truncatulae* Rivas Goday 1958"] has been ascribed to the *Molinerion laevis*, and thus to the annual grasslands of the class *Helianthemetea guttati* (Rivas-Martínez et al. 2001: 108). On the other hand, the association "*Agrostis truncatula* et *Periballia laevis*" is transitional between the xerophytic annual-dominated grasslands of *Agrostis truncatula* Parl. 1850 (reported in the Euro+Med 2023 as *Neoschischkinia truncatula* (Parl.) Valdés & H. Scholz 2006) and the mesophytic grasslands of *Agrostis castellana*. In fact, this association name has never been used and was suggested as a dubious name by Rivas-Martínez et al. (2011: 290). Therefore, we propose to preserve the name *Agrostion castellanae* Rivas-Goday 1958 corr. 1964 (*Agrostion castellano-tenuis* Rivas-Goday 1958) in its current use by designating a conserved type not belonging to the original diagnosis.

As mentioned above, the name *Agrostion castellano-tenuis* Rivas-Goday 1958 was corrected to *Agrostion castellanae* by Rivas-Goday (1964) due to the misidentification of one of its name giving taxa. However, while there is no doubt about the absence of *Agrostis capillaris* in the unique association mentioned in Rivas Goday (1964), namely the *Holco setiglumis-Anthoxanthetum aristati* Rivas Goday 1958 (lectotype), this could not be the case for one of the associations of the original diagnosis of the *Agrostion castellano-tenuis* Rivas Goday 1958, namely the "As. *Agrostis truncatula* et *Periballia laevis*", described with relevés from NW Spain (León and Zamora provinces) where both species are present. Therefore, if it would be proven that *Agrostis capillaris* occured in the original relevés of Rivas Goday for this association, then the correction *Agrostion castellanae* Rivas Goday 1958 corr. 1964 would be illegitimate (Def. V, Art. 43).

Proposal

We propose to preserve the name *Agrostion castellanae* Rivas-Goday 1958 corr. 1964 (or the corrected illegitimate name *Agrostion castellanae* Rivas-Goday 1958 corr. 1964 if it would be proven that *Agrostis capillaris* occured in the relevés of the original diagnosis of the *Agrostion castellano-tenuis* Rivas Goday 1958) by designating a conserved type that does not belong to the original diagnosis.

Therefore, in order to preserve the name *Agrostion castellanae* in its current use, namely to represent the "Ibero-Atlantic thermo- to supramediterranean acidophilous perennial grasslands on sandy-loamy soils" (Mucina et al. 2016), we propose to designate the association *Festuco amplae-Agrostietum castellanae* Rivas-Martínez in Rivas-Martínez et Belmonte 1986 (Rivas-Martínez and Belmonte 1986: 418) as the conserved type (Art. 53) of the *Agrostion castellano-tenuis* Rivas Goday 1958 nom. inept. and hence of the *Agrostion castellanae* Rivas Goday 1958 corr. 1964.

At the same time, we propose the conservation of the *Agrostion castellanae* Rivas Goday 1958 corr. 1964 according to Art. 52, that allows conserving it against homotypic synonyms like the *Agrostion castellano-tenuis* Rivas Goday 1958.

The *Festuco amplae-Agrostietum castellanae* was originally conceived to represent the meso- to supramediterranean perennial grasslands dominated by *Agrostis castellana* ("vallicares") distributed in the northern half of the Mediterranean Iberian-Atlantic province (Rivas-Martínez and Belmonte 1986) and has been widely accepted by later authors. It is currently classified within

the *Agrostion castellanae* (e.g., Rivas-Martínez et al. 2011: 290; Costa et al. 2012: 46) and is therefore suitable as conserved type.

Author contributions

All the authors have performed the nomenclatural analysis, discussed the nomenclatural problem, debated the proposed solution, and critically revised the manuscript.

Acknowledgements

Thanks are due to Giovanni Mazzicone (CNR-Bari), Nicolas Fumeaux (Botanical Garden, Geneva), and Séverine Peckeu (Conservatoire botanique national, Bailleul) for helping us in finding references. We also thank Wolfgang Willner and another anonymous reviewer for their suggestions to improve the manuscript. F.F.G. is supported by the Plan Propio of the UCLM (2022-GRIN-34507).

References

Costa JC, Neto C, Aguiar C, Capelo J, Espírito-Santo MD, Honrado J, Pinto-Gomes C, Monteiro-Henriques T, Sequeira M, Lousã M (2012) Vascular plant communities in Portugal (continental, the Azores and Madeira). Global Geobotany 2: 1–180.

Euro+Med (2023) The Euro+Med PlantBase – the information resource for Euro-Mediterranean plant diversity. [URL:] https://europlusmed.org/ [accessed 20 Mar 2023]

Mucina L, Bültmann H, Dierssen K, Theurillat J-P, Raus T, Čarni A, Šumberová K, Willner W, Dengler J, … Tichý L (2016) Vegetation of Europe: hierarchical floristic classification system of vascular plant, bryophyte, lichen, and algal communities. Applied Vegetation Science 19(suppl. 1): 3–264. https://doi.org/10.1111/avsc.12257

Pérez Prieto D, Font X (2005) Revisión sintaxonómica a nivel de subalianza del orden *Helianthemetalia guttati* en la Península Ibérica e Islas Baleares. Acta Botanica Malacitana 30: 139–156. https://doi.org/10.24310/abm.v30i0.7188

Ribeiro S, Ladero M, Espírito-Santo MD (2012) Floristic composition patterns of Mediterranean annual non-nitrophilous grasslands in Eastern Portugal. Plant Biosystems 146: 534–549. https://doi.org/10.1080/11263504.2012.683543

Rivas Goday S (1958) Nuevos órdenes y alianzas de *Helianthemetea annua* Br. Bl. Anales del Instituto Botánico A. J. Cavanilles 15: 539–651.

Rivas Goday S (1964) Vegetación y flórula de la cuenca extremeña del Guadiana. Publicaciones de la Excma. Diputación Provincial de Badajoz, Badajoz, ES, 777 pp.

Rivas Goday S, Rivas-Martínez S (1963) Estudio y clasificación de los pastizales españoles. Publicaciones del Ministerio de Agricultura, Madrid, ES, 269 pp.

Rivas-Martínez S, Belmonte D (1986) Sobre el orden *Agrostietalia castellanae*. Lazaroa 8: 417–419.

Rivas-Martínez S, Costa M, Castroviejo S, Valdés E (1980) Vegetación de Doñana (Huelva, España). Lazaroa 2: 5–190.

Rivas-Martínez S, Fernández-González F, Loidi J (1999) Checklist of plant communities of Iberian Peninsula, Balearic and Canary Islands to suballiance level. Itinera Geobotanica 13: 353–451.

Rivas-Martínez S, Fernández-González F, Loidi J, Lousã M, Penas A (2001) Syntaxonomical checklist of vascular plant communities of Spain and Portugal to association level. Itinera Geobotanica 14: 5–341.

Rivas-Martínez S, Díaz TE, Fernández-González F, Izco J, Loidi J, Lousã M, Penas A (2002) Vascular plant communities of Spain and Portugal. Addenda to the syntaxonomical checklist of 2001. Itinera Geobotanica 15: 5–922.

Rivas-Martínez S, and coauthors (2011) Mapa de series, geoseries y geopermaseries de vegetación de España [Memoria del mapa de vegetación potencial de España]. Parte II. Itinera Geobotanica 18: 5–800.

Romero García AT (2021) *Agrostis* L. In: Romero Zarco C, Rico E, Crespo MB, Devesa JA, Buira A, Aedo C (Eds) Flora iberica: plantas vasculares de la Península Ibérica e Islas Baleares. XIX (II) *Gramineae* (partim). Real Jardín Botánico, CSIC, Madrid, ES, 909–936.

Sánchez-Mata D (1989) Flora y vegetación del macizo oriental de la Sierra de Gredos (Ávila). Institución Gran Duque de Alba, Diputación Provincial de Ávila. Ávila, ES, 440 pp.

Terzi M, Fernández-González F, Di Pietro R, Theurillat J-P (submitted) Phytosociological nomenclature of the class names *Helianthemetea guttati*, *Poetea bulbosae* and *Stipo giganteae-Agrostietea castellanae*. Unpubl. manuscript.

Theurillat J-P, Willner W, Fernández-González F, Bültmann H, Čarni A, Gigante D, Mucina L, Weber H (2021) International Code of Phytosociological Nomenclature. 4th ed. Applied Vegetation Science 24: e12491. https://doi.org/10.1111/avsc.12491

Weber HE, Moravec J, Theurillat J-P (2000) International Code of Phytosociological Nomenclature. 3rd ed. Journal of Vegetation Science 11: 739–768. https://doi.org/10.2307/3236580

E-mail and ORCID

Massimo Terzi (Corresponding author, massimo.terzi@ibbr.cnr.it), ORCID: https://orcid.org/0000-0001-8801-6733
Federico Fernández-González (Federico.Fdez@uclm.es), ORCID: https://orcid.org/0000-0003-1234-4065
Romeo Di Pietro (romeo.dipietro@uniroma1.it), ORCID: https://orcid.org/0000-0003-4983-8931
Jean-Paul Theurillat (Jean-Paul.Theurillat@unige.ch), ORCID: https://orcid.org/0000-0002-1843-5809